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OCTOBER, 1882.

"I should like to know if you would still hold to your opinion about farmers having lawns if you had been where I have just been, down in Massachusetts, where you may ride for miles and miles and find the sod as brown as the soil, the grass all dried out by the long drought! Water is a necessity for a lawn, and farmers cannot have a supply of water for that purpose."

Thus my neighbor accosted me, expecting an easy victory. It was a direct front charge, and though the situation seemed a little discouraging, I made a stand, and replied directly, "Yes, I should still advise every country resident having the opportunity to have his lawn filled with ornamental trees and shrubs and flower beds. Droughts are the exception and not the rule, especially long ones, and even if the sod should be brown for two months it will freshen up and be green again when the rains come, and even in the worst season it will be fine in spring and fall." It is very true that the droughts we are occasionally visited with make the lawns look sad indeed, but often there are several years in succession that we have rains frequent enough during summer to keep the grass most of the time in fair condition. It is not an untried experiment; there are farmers' lawns in different parts of the country that are admirable, and their possessors would not on any account be deprived of them, and I am pleased to say more of them are being made every season, and will continue to be as our people increase in taste and wealth. We have not developed our resources yet for maintaining lawns in fine condition through the summer. A large proportion of the farms throughout the country have never failing supplies of water that by a small expenditure may be made available for the lawn and the garden when necessary. Our people have not yet learned how to use water in cultivation; not all yet know that underdraining in most situations is an advantage. To many it no doubt appears paradoxical that underdraining, sub-soiling and deep tillage should secure to a crop a greater amount of moisture in a dry time than the land in its natural state and left unstirred. The windmill, thanks to the ingenuity of our mechanics, has become so perfected as to be of great service and very reliable, and by its use water can be raised almost without cost, so that it can be distributed where needed. By this means our gardens will yet greatly increase the quantity and the beauty of their productions, and ornamental grounds will be made charming in appearance all the season. Of course, some grounds cannot be so provided, but even without an artificial supply of water there are few country homes in the

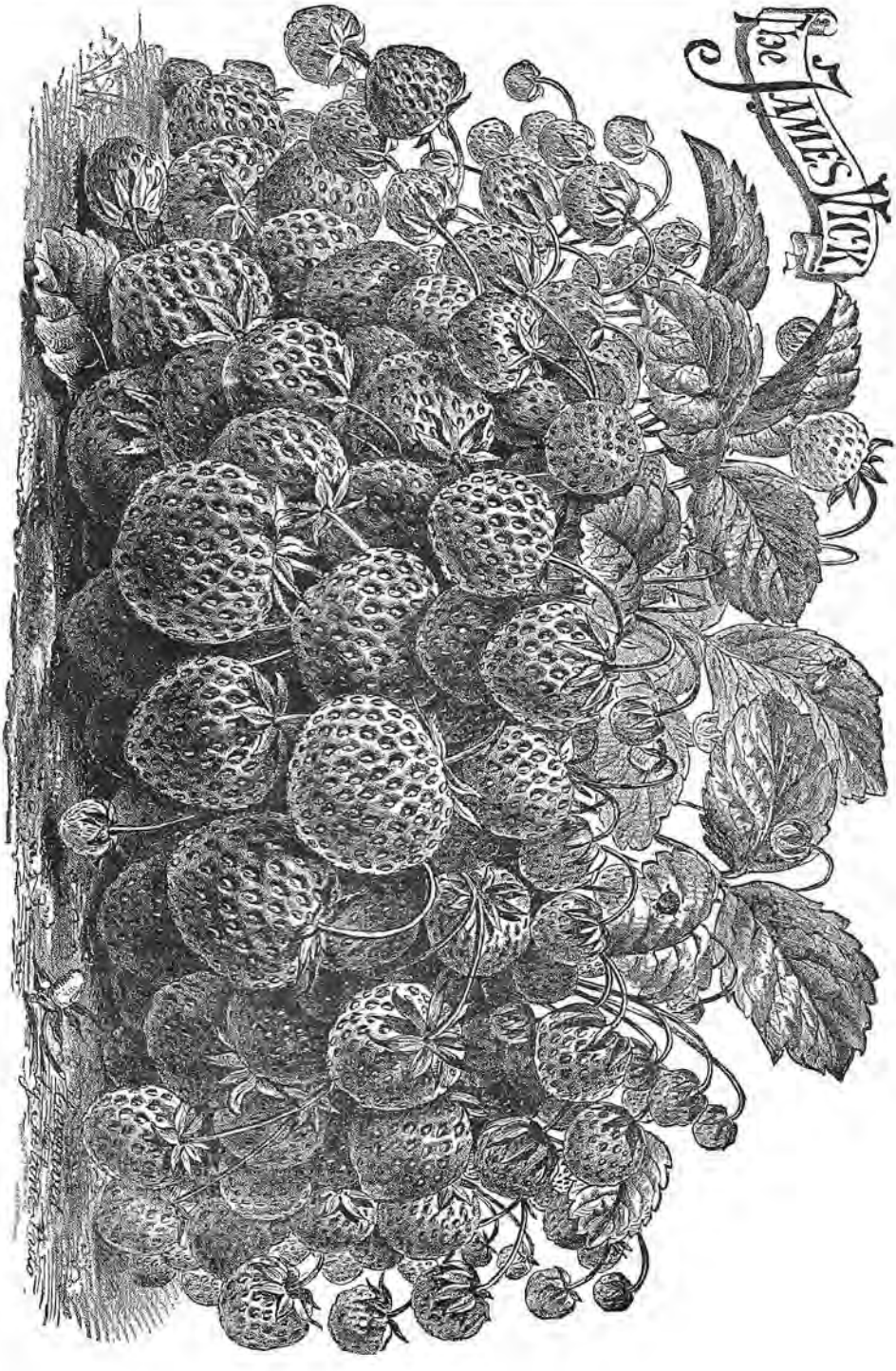
Northern States of this country that may not be surrounded and adorned by beautiful trees and shrubs and flowers, set in emerald grass, at least for several months of the year.

NEW FRUITS.

The remark is sometimes made that new varieties of flowers and fruits are frequently originated and introduced in order to make trade and keep the florists' and nurserymen's business good, as new styles of dress are established for the benefit of the milliner, the dressmaker, and the tailor. But a little thought will satisfy any one that very few plants are

or can be put into the trade merely for this purpose. If it should once be learned that a horticulturist had foisted upon the public a plant of inferior value merely for the trade it might afford him, he would be so deserted by his customers, and by his professional brethren, as to lose many times what he might possibly have first gained by the operation. These men are not so reckless of their reputations; on the contrary, they are, as a rule, very jealous of them, knowing that their ultimate success depends very greatly upon their veracity. There are exceptions, but the exceptions belong to the fag-end of the business, and have comparatively little influence.

Why, then, some may ask, are there so many varieties of new fruits and flowers appearing all the time, which, sooner or later, take their place in the long line of those that are fast disappearing from sight and memory? The reply to this question if given in full might more easily occupy a volume than be stated in a few words. But if it be suggested that tastes differ, human judgment is imperfect, that plants produce results varying with climate, soil and other conditions, and that they develop traits after some years of cultivation that could not be discovered in them in the vigor of their early life, we perceive how, with many other causes that might be named at great length, the chances of a new plant to establish itself in popular favor, for its real worth, are greatly against it.


The JAMES VICK

But we must now consider that a great amount of experience and skilled judgment is possessed by those before whom new plants first appear, and it is not often that a wholly worthless one can be widely disseminated. Our hawk-eyed nurserymen and seedsmen will quickly discover faults where they exist. All of us who are sufficiently acquainted with the history of horticulture in this country well know that great improvements have been made in most of the varieties of our garden plants, our orchard trees, and our fruit-bearing plants of all kinds in the last half century, and especially within twenty-five years. This improvement is going forward to-day, and a wide field is still open for the exercise of all the accumulated skill of our horticulturists for a long time in the future. We may, therefore, expect with every recurring season the advent of new varieties of flowers and fruits, and many of these will be found valuable and superior, and we shall be gainers by giving them a conservatively wholesome attention.

Raspberries and Strawberries for marketing require peculiar combinations of qualities, as not only flavor and productiveness are to be considered, but size, color and firmness. Here, then, are five elements to be computed, with others which may be assumed in indefinite ratios, that will give results that are infinite as far as can be ascertained in calculation; and the more fully we understand the difficulties of originating a valuable fruit, combining the many good qualities desired in these small fruits, the more surprising is it that by means of selection and cross-fertilization so good varieties have already been obtained. It is no longer strange that we make advances slowly, that one variety after another is superseded by those that are somewhat better, and that our ideal fruit is still in advance.

Among the Black Cap Raspberries it is now claimed that the Souhegan should occupy a position in the first ranks. It has been proved by several years' trial in many localities, and without contradiction it appears to be established that it is the earliest of all the Black Cap varieties, being from a week to ten days earlier than the Doolittle's Improved; it is as large as the Gregg and firmer than the Mammoth Cluster. It is said to be enormously productive and very hardy. The berries are jet black and in quality equal to the best. The probability is that this variety will quite supersede the Doolittle, and with the Mammoth Cluster and the Gregg will constitute a series of the highest merits, ripening in succession.

The Souhegan Raspberry originated in the garden of Mr. CARLETON, of Hillsboro County, New Hampshire, about the year 1870, and for several years it has there been cultivated for market, and has proved of great value as an early market berry.

The Hansell Raspberry, that has already been noticed in our pages, occupies a place among the red varieties that the Souhegan does among the Black Caps, it is the earliest; at the same time it is of fair size, of bright crimson color, firm of flesh, of superior quality, and believed to be as hardy as that iron-clad variety—the Turner. With all these good qualities it unites great productiveness. This variety originated on the grounds of the late JAMES S. HANSELL, of Burlington County, N. J., and has there ripened its fruit as early as the fourth of June; this season, which was an unusually late one, it ripened from the twentieth to the twenty-fifth of June. It is evident that it must be of great value.

A Strawberry, cultivated on a fruit farm in this county, was brought to the notice of horticulturists on the 5th of July last, invitations having been sent to visit the place and see the fruit. The visitors were informed that the new Strawberry had been named James Vick. An examination of the plants and test of the fruit satisfied all that it was a variety of superior worth. In regard to it we can only repeat what others have said, but advance no opinion ourselves in regard to it. Still, we have great confidence in the integrity and judgment of the able horticulturists who have decided in favor of the merits of this fruit. A published account of the visit mentioned states that the visitors "were first shown rows of the new Strawberry from plants set late the previous fall, growing in the same bed with Manchester and Bidwell. The new berry showed twice the fruit of either Bidwell or Manchester, and more vigor of plant. The party were next shown a plat of one-fourth acre, not manured for many years, common farm soil in

SOUHEGAN RASPBERRY.

the midst of a field of twenty acres of fruit, on which the new Strawberry had been permitted to form wide and thick matted rows for the purpose of multiplying plants, from the whole of which plants had been dug a few months previous, tearing and loosening the roots of those remaining. The soil was packed hard and very weedy, showing evidence of neglect; yet under such adverse circumstances, which would lead one to expect no fruit worth gathering, the plants were

thickly studded, and the rows fairly ablaze with large, beautifully and evenly colored, firm and shapely berries of superior quality, and from the bed was subsequently picked the largest yield of fruit ever gathered from any variety on our fruit farm. Mr. W. C. BARRY said that of all the new Strawberries he had tested this was the most promising. He described the color as bright scarlet turning to crimson, surface glazed, seeds on surface, season medium, quality good. All the party expressed themselves as highly pleased with the display of fruit, and ate it with a good relish. We heard no criticism, and indeed, there could be none. The plant was vigorous, with large, glossy dark green foliage, the blossoms hermaphrodite, or perfect, the fruit handsome, large, luscious, firm and in great abundance. We tested them under this rough treatment purposely."

Another of the visitors writes that "the next day we visited another plantation of the same Strawberry, in this city. There the plants had the disadvantage of growing between rows of Grapes, but they were well cultivated, clean, free from runners, growing on stooled hills The show of fruit was enough to awaken a smile of pleasure in an anchorite, that Nature can and will produce so bountifully of a fruit so delicious. There were no omissions, no vacancies. Fruit stems were plentiful and every berry fully developed. We can neither expect or ask Nature to do more in the way of fruitfulness than she had there done with that Strawberry."

The points of merit claimed for the James Vick are briefly these:

1. Fine quality, unusual vigor, and hermaphrodite, or perfect blossoms.

2. Color, form and firmness of berry, which approach the ideal. No white tips, no coxcombs.

3. Ability to stand on the vines a week after ripening, without becoming soft, or rotting, or losing quality or much lustre. Instead of softening it shrinks a trifle, and becomes firmer than when first ripe.

4. Uniformly large size, and productiveness unequaled by any other variety. One hundred and eighty berries were counted on one average plant, and from one row about one hundred feet long nearly two bushels of berries were gathered.

How well this variety will sustain the claims made for it is yet to be proved, and possibly it might have been better to have given it another season's trial before making it known, but we respect the judgment of those having it in charge, and trust it may prove to be the acquisition that it now promises.

A FERN CASE.

A Fern-case occupied with healthy thriving plants is a pleasing and interesting object in the parlor or the sitting room, and one soon experiences a sense akin to companionship with its green inmates. But if, day after day, the verdure takes on a yellowish and still more yellow hue, if the fronds that once spread themselves in graceful curves become limp and droop and look forlorn notwithstanding all our efforts to assist them, if they persistently refuse to be comforted with all our well meant attentions, then our visions of beauty vanish

"—like a dream of the night,
And leave but a desert behind."

Disappointment has too often been the result of the cultivation of Ferns and plants requiring similar treatment in closed cases. We may very properly inquire why this is so. But, first, why should a case be used at all? It is in order to preserve an atmosphere about the plants sufficiently humid and equable to be agreeable to them. Experience has proved that such provision is necessary, except with a few thick-leaved, hardy species; and by it is attempted imitation of an atmospheric condition found in forests and thickets and in the glens and ravines of streams with high rocky banks, shaded by trees and shrubs, the chosen abode of many kinds of Ferns. But it appears as if this thought had entirely engrossed the attention of Fern cultivators, and having secured a condition of air properly humid they have neglected, or rather overlooked, all other requirements of these plants.

However sheltered from winds may be the interior of woods and thickets there is constantly and silently an interchange of air therein with that of the open fields; streams of the warmer air under the sunshine, cooled by contact with the foliage, flow down among the leaves of the tree tops and replace the cooler air of the enclosed space that flows out along the

ground into the open, and at night, when the temperature becomes sufficiently low, just the reverse takes place, the air of the interior ascending while a cooler stream flows in along the surface of the ground. Thus, there is a constant renewal of the air under the trees and in the ravines, although usually the motion is so slight as to be unfelt.

Another fact is, that Ferns do not like stagnant water. Although many species inhabit low, moist places, yet it is where

there is a renewal of water that passes off by direct current or natural subsoil drainage.

In the ordinary Fern-case no provision is made either for ventilation or drainage, and on these accounts its use is a failure, sooner or later. A person with ordinary mechanical skill can make, at no great expense, a useful and satisfactory plant case when it is understood what is wanted. The case may take a great variety of forms and yet be adapted to the purpose for which it is designed, and in this respect there is a wide range for the exercise of taste. In the illustration here offered, a very serviceable form is presented, from which, however, any desirable deviation may be made as fancy may dictate, as long as the essential requirements of the case are observed. Of course, enclosed windows, or window cases, such as have been frequently described in our pages, have all the advantages of plant cases, and are really better for Fern growing. However, the Fern-case has its place, and if properly made and cared for may be the means of affording both pleasure and instruction.

For ordinary rooms a good sized case may be twenty-four inches long, sixteen inches wide and twenty inches high; a case thirty inches long, twenty inches wide, and thirty inches high from the base to the peak or ridge is more ample and will cost but little more than the smaller size, and will allow the use of larger growing species. The base may be made either of soft or hard wood and finished according to fancy, but if made of some wood with a handsome grain, and finished in oil, it will look best and not be more expensive than if painted or ebonized. If desired, the base may be made with panels, using wood of two colors, but, would be more difficult to construct. Plain wood work with light mouldings is perhaps best. A good height for the base is six inches, and the bottom of it may consist of any light wood not more than half an inch in thickness. A tray of zinc or galvanized iron is to be made to fit inside of the base, having its upper edge turned down and up in L form, upon which it rests on the upper edge of the wooden base, which is cornered out all around to receive it. The sash frame containing the glass is to be made of a size to fit on the horizontal part of the edge of the tray, thus conveying all the water that may be condensed on the glass to the inside.

The tray should be made so that any excess of water in it will drain to the center, and there should be a hole with a small pipe fitted to it to conduct it through the bottom board, where it should be received in some small vessel placed underneath and hidden from sight. An acquaintance with many ways of fitting up these cases has given us the opportunity of forming an opinion of their relative value, and in regard to opening them our preference is decidedly in favor of doors at the ends. Sometimes the top,

or slanting part, is made moveable, and sometimes the sash is swung at the ridge, and both of these methods are unhandy and objectionable on several accounts. By having doors at the ends easy access is given to the plants, and water can be applied in any manner most desirable, and by the same means perfect ventilation may be secured. The stand may be of any design to please the fancy, and two feet is high enough for it. Any one fairly clever with tools can make such a case at odd hours, and at little expense.

Besides Ferns, many kinds of Mosses and Selaginellas succeed well, also some species of Grasses, Achimenes, Marantas, some of the Caladiums, Begonias of the Tuberous and the Rex varieties, Dionæa muscipula, the Sundews or Droseras, Sarraceneas, some of the Aroids, Coccoloba platyclada, Ficus repens, and others. An interesting variety of plants may, therefore, be secured, but Ferns must be the principal feature. Of the latter the number of species and varieties that may be cultivated in a fernery is very great, and one cannot go far amiss in employing any of those of foreign origin that are offered for sale by the trade, if the very largest ones are avoided. Of native species the Maiden Hair, the Sensitive Fern, the Woodwardias, the Lady Fern or Asplenium filix-fœmina, A. angustifolium, the Bladder Ferns, Aspidium spinulosum, A. Thelypteris, A. Novaboracense and A. cristatum, and some others, offer a pleasing variety.

The case when planted should stand where it can receive a good light without being much exposed to the sunshine. Only sufficient water should be given to keep the soil moist and not saturated. The ventilation required is but slight, but it should be carefully attended to each day, opening the doors very little, enough to clear the glass of moisture, and then closing them. A little experience will enable one to care for a case as it should be, and much enjoyment may be received thereby.

The greatest variety of Ferns and other plants will be suited with a soil consisting largely of leaf mold, sand and turfy loam in about equal quantities. To fill the case, first place a fragment of broken pot over the drainage hole so as to prevent its becoming stopped up, and then make a layer of similar material, or coarse gravel, over the whole bottom about an inch in thickness. Now place a layer of sphagnum an inch or an inch and a half thick, and then over this the prepared soil within half an inch of the top.

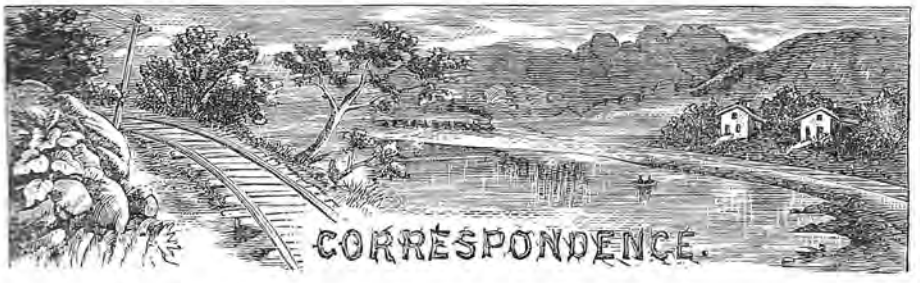
GARDEN WORK.

The present month is favorable for a great variety of garden work that is preparatory for another season. In the flower garden prompt attention should be given to the preparation of beds and the planting of spring blooming bulbs. Inattention to this matter now will deprive us in the spring from the pleasure to be received from the blooms of the Snowdrop and Crocus that so early advise us of the speedy coming of the Hyacinths and Tulips to brighten up the sombre gardens so long subject to storms and frosts.

In gardens where the soil is heavy the best results follow from forking up the ground in the fall, and letting it lie rough through the winter. By this means the frost enters and acts upon the soil, disintegrating it, and making potential some of its latent fertility. The plants that are to give winter bloom should by this time in the colder parts of the country, be under cover, while further south their removal will be in process. All Dutch Bulbs for winter bloom should be potted without delay; and house plants of all kinds will now demand more than usual attention, according to their respective needs.

A NEW HELIOTROPE.

A seedling Heliotrope originating on the ground of one of our neighbors has proved to be a strong, healthy grower, producing large clusters of flowers very freely, in fact, it is seldom out of bloom. The trusses of flowers with good pot treatment are remarkably large, and at the same time the individual flowers are large. On first opening the flowers are of a darkish purple hue, but fully expanded assume a tint between light blue and lilac; they are very fragrant. On the whole, this variety, called Forget-me-not, a colored plate of which is presented this month, may be considered as one of the most desirable of this favorite flower.



A BIT OF FLOWER GOSSIP.

It has been a long time since I have gossiped in these pages about flowers. Since my last I have formed an acquaintance with a goodly number of rare and beautiful plants and shrubs. Some of them I specially value, and will refer to them for the benefit of others who may not have cultivated them. Torenia Fournieri superbens is very attractive, with its sky blue flowers, on each petal of which is an indigo blue spot, bright yellow throat. It is a profuse bloomer. Mesembryanthemum variegatum, or Variegated Ice Plant, is very handsome. The leaves are white with delicate green markings. A low growing plant, and endures heat and dry weather admirably. The new Ageratum, Malvern Beauty, is of very dwarf, compact habit; color intense blue; full of blooms, and very attractive.

A very desirable shrub is now in bud and bloom, Tabernæmontana Camassa. The double white flowers resemble the Gardenia, or Cape Jasmine, in form and fragrance, but are not quite so large. Small and very robust plants, about eighteen inches in height, are blossoming freely. Some say that it can be wintered safely in the cellar. Will some one inform me who has tried it? I supposed it required hot-house treatment. A writer in *The Garden*, an English work, says of it, "this extremely pretty shrub is found to be invaluable for supplying the demand for cut flowers. The Trentham plants are large shrubs, and yield continually profuse crops of blossoms; the perfume is exquisite." I find in different catalogues T. Camellia flore-pleno and T. coronaria fl.-pl. Are these different varieties of the same species, or the same plant under different names? The descriptions are so nearly the same they might apply to either.

A shrub of Dimorphanthus Mandchuricus sent me, last year, from Washington, has endured the severity of our northern winter, and is so unique in its beauty I want to sound its praise all abroad, for it is worthy of extensive cultivation, and is, as yet, I think, but little known. A little plant mailed, I think, in July, grew with such rapidity after bedding out that it had several leaves in the autumn full three-fourths of a yard in length, and almost as wide. In April, I observed two leaves starting, and I was delighted to find it had endured our long, severe winter. There are now four multifid leaves about a yard in length and as much in width, and others grading down to the new ones just starting forth. It is one of the grandest shrubs to grow by itself in a plat on the lawn. I say of this, as I have often said of the Hydrangea grandiflora, get one by all means. For flowering, what shrub can surpass the Hydrangea, and for elegance of foliage, what shrub can surpass the Dimorphanthus?

Another hardy shrub from Japan is Desmodium Japonicum, which bears, in the greatest profusion, its white blossoms from August till severe frosts.

And yet another of my new hardy shrubs is Abelia rupestris, which bears, during summer and fall, long racemes of pure white flowers.

Clerodendron viscosissima is another, new this summer, and has not yet blossomed.

I will only name one more of my new hardy shrubs, Posoqueria longifolia.

So satisfactory have been the hardy shrubs and perennials, which, once established, thrive and bloom year after year with very little care, I feel an increasing interest in this class, and desire to add each year a few choice kinds, some that are novel in character, and I much regret

that I have not heretofore given more attention and money in this direction and less to the tender and perishable. I still love Roses, but as a writer has said in these columns, "they are fussy plants," i. e., the Teas. I have them always bedded out, and they thrive out of doors, but die in the house and cellar, so I value more highly the hardy Hybrid Perpetuals and Mosses, of which I have a choice collection for an amateur. I still make a specialty of Geraniums and will never desert them.—MRS. M. D. W., *Yarmouth, Maine.*

NOTES FROM FLORIDA.

There is a class of lands common to Florida, Georgia and South Carolina, composed of, perhaps, five-sixths sand, so fine that plants can with great difficulty put out any but lateral superficial roots, and with the coming of the rainy season they scald to death. To make a flower garden on this class of land enriching of the soil is required and raised beds. Now, what flowers can be grown when this has been done, or rather, what flowers can be grown where Mullein, Blueberries, Huckleberries, Blackberries, Orange trees and Jasmines grow? The prettiest "weed" I have seen in Florida is Phlox Drummondii, self seeding so freely that it would be condemned if it had the habit of taking strong root hold. Vincas and Browallias need but to be once planted to perpetuate their kind, and so also Verbenas, Candytuft, Sweet Alyssum, Mignonette, Pansies, Sweet Violets, Carnations, Poinsetta pulcherrima and Achania malvaviscus with abundance of foliage, looking almost like new varieties.

We have a native Portulaca, with diminutive flower, and I see Lobelia cardinalis flaming in the swamps. Our seasons are generally extreme drought and heavy rains. If we could have them better proportioned as to time and quantity we would be more successful than we now are. We have, also, Chrysanthemums, Maurandya, Solanum capsicastrum and Jasminoides, Daturas, Achyranthes, Coleii and Gladioli, Tuberoses and bulbous plants, as Lilies, Caladiums, and the Amaryllis tribes, as also the beautiful Pancratium rotatum. Rose Geraniums I have seen covering a space six feet in diameter in one season from a slip. Plumbago looks beautifully to those who like it. We have two varieties of what appear to belong to the Asclepias, one exhaling a fragrant odor and the other being much more brilliant than an orange red variety common in some parts of the west. We have a beautiful spring White Lily, called Zephyranthes Treatiæ, that should be distributed among all lovers of flowers. Its habit is to frequent low, moist places, and is quite abundant. We also have a little bulbous plant blossoming in June, which I hold in remembrance as being more beautiful than the Lily of the Valley.

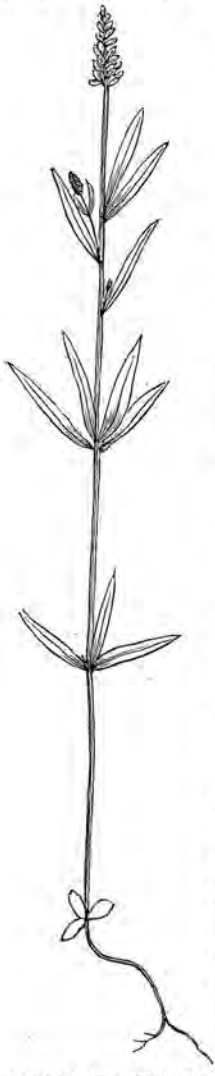
Before closing I wish to say that it is not necessary to have either the odorous kerosene, or still more offensive whale oil scenting the house, yard or greenhouse. Take three pounds of bar soap and slice; I do it with a hatchet. Place in a kettle of say three gallons capacity, and add half a bucket of water and subject it to fire heat, without stirring, until the soap is dissolved. If you stir, the soap is broken into small pieces and not left on the stove long enough, and the undissolved pieces are apt to clog the syringe. Now add the contents of one box concentrated lye, and be careful to stir it by gently moving the mass at the bottom with a stick, and let the commotion subside before stirring again; repeat until there is no foaming and return to the fire for fifteen or twenty minutes, and stir. Remove and add it to forty or forty-five gallons of water, previously placed in a coal oil barrel. At the end of twelve to eighteen hours it is a thin soft soap, and for using may be diluted with water one half, and kills scale, red spider and aphides, and is, in addition, a cheap and splendid fertilizer.—E. C., *Lawtey, Fla.*

FRUIT DESTROYED.

Yesterday and last night, September 14, a great gale swept over this region, laying down our corn-fields and blowing nearly all the fruit from our trees. If I should plant another orchard I should should certainly begin by planting several rows of Norway Spruce on the west side for a break wind. I have no doubt it would pay its cost many times. I had but few Apples, probably not more than a hundred barrels, but these were very valuable on account of the general scarcity. Now I do not expect to gather thirty barrels sound fruit.—W., *Wayne Co., N. Y.*

MILKWORTS.

Our native Milkworts form quite an important and interesting group of plants, not only on account of their medicinal properties and peculiar structure, but also owing to the delicacy and beautiful coloring of several of its species. Perhaps the best known representative is Polygala Senega, the knotted root stock of which furnishes the Senega, or Senega Snakeroot of commerce. It is a trim little plant, sending up several simple stems which are clothed with lanceolate leaves, and terminated by a close spike of small white flowers.

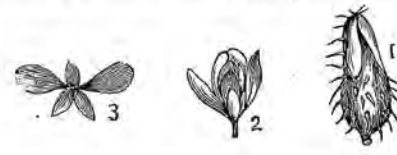


POLYGALA VERTICILLATA. NATURAL SIZE.

Polygala sanguinea is a smaller species with a more branching habit, but larger and more showy globose, or oblong heads of bright purple-red flowers. The root is somewhat fibrous, and has a pleasant aromatic taste, closely resembling that of Gaultheria procumbens, (Wintergreen.) Most botanical works give the habitat of this species as moist, sandy ground, but I have seen it growing in abundance on the dry, rocky bluffs of the Iowa river.

Polygala paucifolia is a small vernal species, throwing up numerous flowering stems from slender horizontal shoots. The ovate leaves are crowded near the summit of the stem where they are crowned or interspersed with several large fringed flowers of a most exquisite rose-purple tint. It is commonly known as Fringed Polygala, or Flowering Wintergreen, and it is by far the most beautiful of our Eastern Milkworts.

Polygala lutea has oblong heads of bright orange yellow flowers, and is found in sandy swamps near the coast, from New Jersey southward. There are several other common and widely distributed species, but I trust that an acquaintance with any of the above mentioned ones will serve as a general introduction to the family. For fear, however, that the more attractive and coquetish members will monopolize more than their share of attention, I have sketched one of the most modest and retiring of the group, and hope that a careful study of it may reveal some of the general characters of the genus, especially the irregular form of the flower, and the curious caruncle or appendage at the hilum of the seed.



Magnified objects are here shown; figure 1 represents the seed with its two-cleft scale, or caruncle; figure 2 shows the large lateral petaloid sepals, and the sepals on the opposite sides small; figure 3 represents the calyx flattened, showing the same parts as figure 2, but a front view, where the large lateral and small upper and lower sepals appear more distinctly.—C. A., *Moravia, N. Y.*

A SCREW-PINE.

The Red Spined Screw-Pine, Pandanus utilis, is a stove or hot-house, evergreen plant. It is a native of the Island of Bourbon, the South Sea Islands, and the Isle of France, where its strange spiral form constitutes one of the most singular features of these favored lands. In its native countries it attains a height of over twenty feet; the leaves are from three to five feet in length, and from one to three inches in width, gracefully recurved, and of a glaucous green color, armed on their back and edges with dark red spines. The leaves are also gracefully and spirally arranged on the stem of the plant, from which circumstance the popular name of Screw-Pine is derived. As the plants in-

crease in size their tops soon become heavy, when they throw out prongs in an oblique descending direction, one, two or three feet up the stem; these prongs soon take root and thus suppurt the plant. In its native country its popular name is "Pandang," which is said to signify "something to be regarded." It is stated that it was so named on account of the beauty of the tree, as well as the exquisite odor of its flowers. It is said that in the South Sea Islands, and other places where this and other varieties are to be found, that their leaves are extensively used by the natives for the purpose of making mats. Although this Pandanus is usually described in the catalogues as a stove or hot-house plant, it can be successfully grown in the greenhouse, window garden, or any situation where a winter temperature of from 55° to 60° can be maintained. It is a beautiful and interesting plant at all seasons, and is well adapted for exhibition purposes; as single specimen plants for decorative purposes where the conditions are favorable, no plant is more suitable for room cultivation. It is a plant of comparatively easy cultivation, requiring a compost of two-thirds well rotted sods, one-third well rotted manure, or leaf mold, with a sufficient portion of sand added to render the whole mass porous and open. The plant should be given good drainage and not allowed to become too wet, neither should it be permitted to become absolutely dry. Care should be used not to overpot, and when repotting not to injure the large, fleshy roots. During its season of growth water should be given freely and the plant sprinkled overhead occasionally. In the summer season the plant may be placed or plunged in a partially shaded situation. Good, strong plants of the Pandanus can be obtained at a very reasonable price.—C. E. P., *Queens, L. I.*

PANDANUS UTILIS.

AN ONLY PLANT.

Though gardening is an instinct of my nature, and whenever I undertake it the soil is generously responsive to my manipulations, there are times when by pressure of important business mother earth and I become so estranged that I scarce touch her surface with hand or foot through the whole bright summer. So it was last season, when, but for the attention of a kind neighbor, who in planting her own garden set her over-plus of seedlings in a little plat by my door stone, not a flower would have opened for me. These little plants made a brave struggle under neglect, and cheered me many a time when worn and weary, by their bright blossoms.

One among them, however, with the name and nature of which I was unacquainted, produced only leaves; but becoming interested in it I ordered its cultivation by digging into the soil about it some fine, rich earth, and occasionally drenching it with liquid manure. It flourished grandly, and when autumn came looked so verdant and valliant that I had it taken up in the most careful manner, cutting a trench about it as precisely as if digging for the foundation of a house, then lifting it into a good sized tub, which, when filled, needed a man to move it. After sheltering it for a time in a sunless nook, and just before hard frosts, we gave it a place in a large, bright window of my chamber, and let it grow. When, at last, some shoots sprung up, and soon were strong with little knobs of buds, which slowly unfolded into greenish, ugly-looking semblances of flowers, I fancied I was to have only my labor for my pains, but still did not quite lose patience with my plant. What was my surprise, then, after some days' absence, to find in a fair unfolding of one of the buds a large, compactly double, pure white flower, like a rose. From that time on it grew and blossomed until the tub bristled with the most luxuriant spikes of these

double white roses, and the "only plant" became the glory of my house, and also of the neighborhood, for we set it in one window and another as was most effective, and it never failed to attract the admiring gaze of passers by. So it flourished for months until one cold night of a severe winter it was fatally frozen, and was put regretfully out of sight. It was some time before I saw my friend, the donor, and told her the story of the plant. She exclaimed, "Why, that was a splendid specimen of a Stock Gilly; and O, if you had only sent it over to our warm house it would have blossomed on and on, until warm weather, and then would have been nice to set out in the garden again."—H. E. B.

A CHINESE GARDEN.

I wish to tell you something of the beauties of this land. There are those who think there can be no beauty here, yet the people themselves call their country the Flowery Kingdom. Could your readers take a climb over the hills here at any time of the year, if they are lovers of flowers and Ferns, their eyes would be feasted and their hearts made happy. What can be more lovely than, in early spring, to see these hills covered with the lovely Azaleas. Mr. FORTUNE, a traveler in China and collector of botanical specimens, says: "Most people have seen and admired the beautiful Azaleas which are brought to the Chiswick fetes, and which, as individual specimens, surpass in most instances those which grow and bloom on their native hills; but few can form any idea of the gorgeous and striking beauty of these Azalea-clad mountains, where, on every side, as far as our vision extends, the eye rests on masses of flowers of dazzling brightness and surpassing beauty."

Then, too, there are the Honeysuckles, wild ones, Clematis and the fragrant Glycine; these all climbing among the hedges and on trees, hanging their pretty flowers over the mountain paths and filling the air with fragrance. There, too, are the many Ivies, so kindly overgrowing and covering up all unsightly objects, making them instead objects of beauty. Tucked away in among the rocks, are the pretty Ferns, so beautiful, so cool looking, not the least attractive among these is the Climbing Fern.

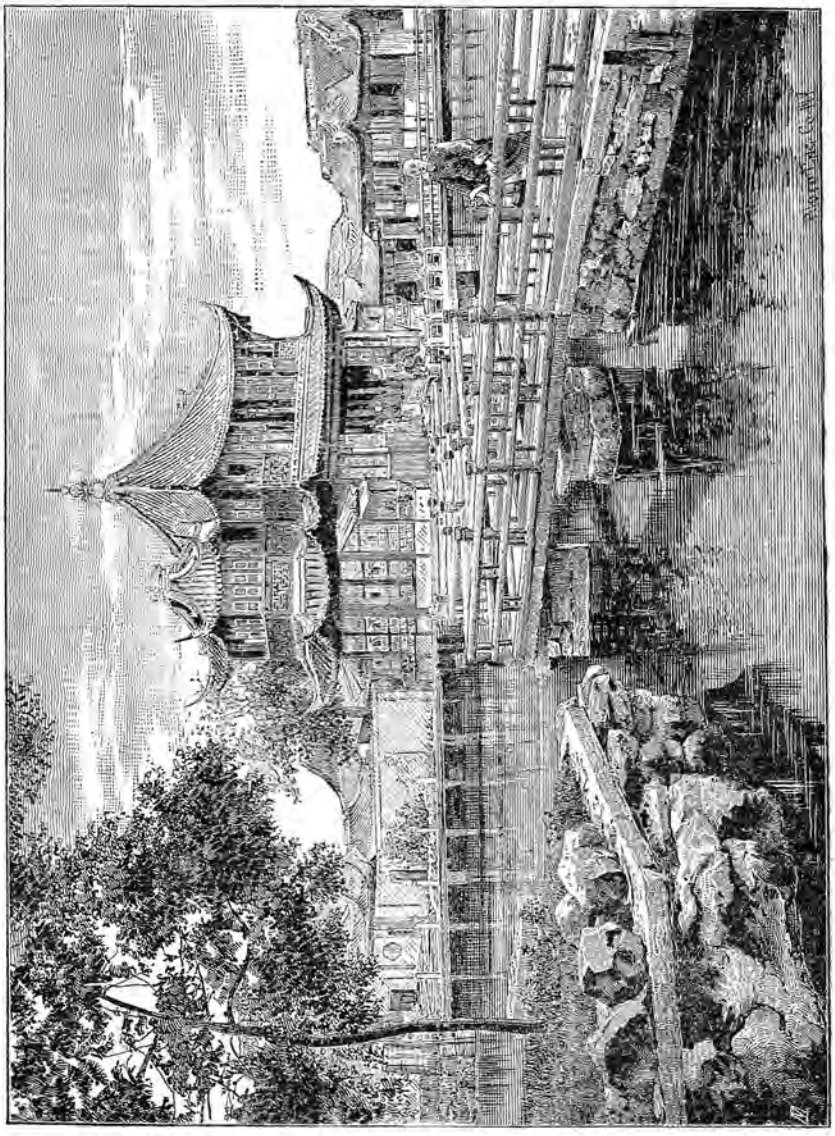
I do not want you to think this list contains the names of all the pretty flowers to be found here among the hills. There are many others for which, not being a botanist, I have no name. There are many, too, that I have not seen, for there are other plants here which require most of my time, native plants, too, not as attractive looking, perhaps, but more precious in the eyes of their Heavenly Father. These require our time, the other nice flowers are only for our recreation hours.

There are still other flowers we can enjoy at all times, having them in our own yard. Of these I will write at another time. I send you a photograh of a portion of a Chinese flower garden, where, as may be perceived, water is made a very important feature.

Though their gardens are not arranged according to our Western plan, yet they are places of beauty, and it is surprising how much beauty and variety they can have in so small a space. There is no smoothly shaven lawn, no babbling brook, no fountains, but most of the space is taken up in buildings, tea houses, fitted up with pretty Chinese pictures, colored glass windows, mirrors and screens, and a few foreign, curious, singing birds and fragrant flowers. Here, in the pleasantest weather, the Chinese men and a few women sit and enjoy their tea and little dishes of fancy deserts, and a good long chat with their friends, their eyes being feasted by the beauties outside of running vines and pretty flowers that fill the air with their fragrance.

Outside of these tea houses, which are connected together by curiously winding passages ornamented here and there with quaint carvings and odd figures, is what accords more with our ideas of a garden, and it is a place of beauty; still, I think, a western gardener could improve it much. Here is the pond, crossed by zigzag bridges, a large stagnant pool, a thing of beauty when covered with the large, cool Lotus leaves, with its large, bright pink and its pure white flowers; but before these appear there is no beauty there, for the water is so murky that it is only occasionally that one can catch a glimpse of the little gold fish with which it is filled. The sides, though, are covered with pretty overhanging vines and Ferns and bushes.

The rockeries are odd and pretty. They are not merely piles of stone, but display ingenious masonry, representing a cave, with many winding passage ways. If one starts in he is surprised at its many windings, which, of course, make it appear much longer than it really is, and wonders if he will never reach the other end, or find himself again at the place of starting, for at one time he is lead by his guide to the top, getting a glimpse of light, then down, and still deeper down in the dark, in and out, back and through, zigzag, and every conceivable way, always a new path, and never retraversing those already passed, until at last he has passed through all. Vines grow so readily here that walls and stones are soon covered with green, and are transformed to objects of beauty. The Roses and Honeysuckles, the Camellias and Azaleas, the Pæonies, and many other flowers, all add to the beauty of the place. This is a Chinese Paradise!—MRS. A. S. P., *Souhow, China.*



HYACINTHUS CANDICANS.

Hyacinthus candicans, of which an engraving was given last month, is growing in favor in England, where it has longer been cultivated than here. It may be well for our readers to know that the first diagnosis or analysis of this plant has been found, after better acquaintance with it, to be incorrect, and that the plant is not a true Hyacinth. As a result of the latest scientific investigations it bears the name of Galtonia. It is probable that in the trade the name Hyacinthus candicans will long be employed, for it is found that the name by which a plant is first introduced clings to it indefinitely.

The Garden says of this plant, "it is used very effectively by Mr. BURNETT, at the Deepdene, Dorking. In a long border, skirting the principal walk to the kitchen garden from the pleasure grounds, there is a fine row of it placed a yard or more apart and interspersed with hardy herbaceous and other plants, above which the tall spires of the Galtonia, gracefully furnished with pure white bell-like blossoms, assert themselves boldly, and will be the main feature of the border for some time."

A correspondent of the same journal writes as follows: "It cannot, I think, be generally known that this makes a fine pot plant. It is still less known, perhaps, that it can be forced into flower out of its natural season. It is rather a striking plant when well grown in pots and placed amongst other bright flowering plants, as it has ample leaves of a pleasing shade of green. It may be potted singly in six inch pots, and grown as for in-door decoration; but it is much more effective when five or six bulbs are planted in eight inch pots, and the growths neatly staked as they increase in height. They are not at all particular as to soil. I find they grow very strongly in half loam and half leaf soil, but no doubt any ordinary garden soil would suit them. They like a fair supply of water, especially when producing their flower spikes. In dealing with them under glass, a light, airy position is necessary to secure well developed foliage. Potted at different times, they may be had in flower nearly the whole year, and therefore they are valuable for those who may require white flowers for cutting. One has only to cut out the dark anthers to have a very chaste and beautiful white flower. In dealing with them in the open ground it is best to plant them and leave them alone. I planted some bulbs in clumps six years ago, and there they have remained undisturbed since. Every year they increase in number and effectiveness, so that no severe frost is likely to hurt them. For the mixed border they are very useful, as they come into flower at a time when hardy flowers are scarce. Planted in alternate clumps with Gladioli they are very striking, being of the same habit of growth. As they seed freely, and the seed ripens in ordinary summers, it is easy to raise a few hundreds or thousands of bulbs in this way, if so many are required. We sow the seeds thinly in the open ground in April, and leave the young plants undisturbed all the summer, just keeping them free from weeds. In November the bulbs are lifted and stowed away, as we do Dahlias, not to keep them from frost, but to make sure of their not being injured by being dug up in winter. If we want a few dozen roots to flower the next summer, we select the largest and keep them separate. In spring the largest are planted where they are wanted to flower; the small roots are planted in the reserve border. They are put about two inches under the surface.

and nine inches apart each way. Generally the whole of these small ones flower the second year; but if large bulbs are wanted, it is best to pinch off the flower spike to give strength to the roots."

A STEPHANOTIS.

The following account of a plant of Stephanotis, by a correspondent of the *Gardeners' Chronicle*, will be found of interest to many readers. "A few days ago we saw growing in the Handsworth Nurseries, near Sheffield, a real Stephanotis floribunda. It is well known that there are varieties of Stephanotis in the trade under the name of floribunda that are not free blooming sorts, and are the source of endless disappointment to those into whose hands they happen to fall. This plant at the Handsworth Nurseries was growing in a cool house, the temperature during winter often falling below 45°. It was planted in a small border, or rather brick pit, eighteen inches square, eighteen inches deep, in peat and loam, and top dressed with rotten cow manure. Its branches were trained to thin wires, which extended twenty-eight feet in length and eleven feet in width. There had perhaps been cut off three hundred trusses during the last fortnight, and 1450 developed and undeveloped bunches were left on the plant. The bunches were borne freely on the old wood, and at every joint on the growth of the current year. The house was filled with fine plants of greenhouse Rhododendrons."

IVY-LEAVED PELARGONIUM.

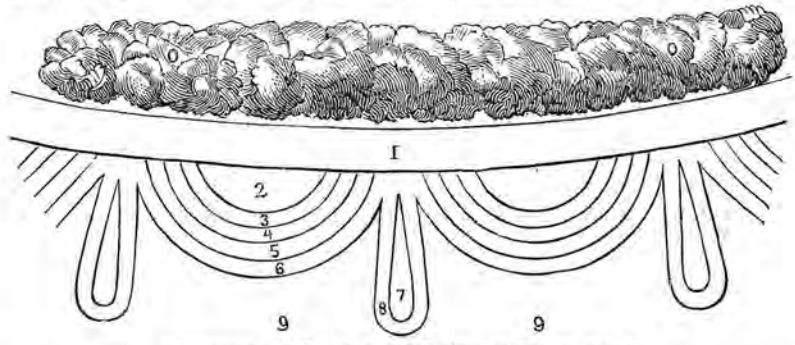
A correspondent in a foreign journal says: "No class of Pelargoniums has shown such rapid strides within the last few years as the Ivy-leaved section, in which there now exists great diversity of color in both the single and double kinds. For the whole of the following we are indebted to Continental growers: Eurydice has free, vigorous habit, and large semi-double flowers of a bright rosy mauve color, shaded in the center with violet. Except that the flower is altogether of a brighter tint, it resembles in general appearance that of the better known Mdme. Crousse. Comte and Comtesse Horace de Choiseuil were both awarded certificates the other day by the Royal Horticultural Society. The flowers of the first are salmon rose, with at times striped petals; those of the second are bright pink, shaded toward the outside with magenta. Mdme. Jules Menoreau is a round double flower of a remarkably pleasing shade of deep rose, very distinct from any of the older kinds, but in intensity of coloring scarcely equal to Mdme. Lemoine. The latter may be described as a truly magnificent variety, the habit being free and vigorous, the trusses large, and the individual flowers very double. In this the brilliant rose color is shaded with magenta. Robert Fortune is not new, but the color is very distinct from that of the others. In this variety the flowers are more sparely produced than is generally the case. The above are all double flowered kinds. Of new singles Multiflore is very beautiful. Its flowers are good in shape, and in color very bright rose. Although a true Ivy-leaved kind, its blooms are nearly equal to the zonal varieties in form, and quite so in their beautiful tint. Beaute de Lyon is not new, but is still a desirable kind. It is of much stouter growth than any of the preceding, and looks as if it might have been a cross between the Ivy and the zonal sections; the flowers most resemble those of the last named class, and the foliage that of the first. In color the blossoms are bright scarlet, shaded with purple."

A HYBRID CRINUM.

A new hybrid variety of Crinum has originated in England, that after several seasons of trial proves to be hardy in that climate. It is thought that it is likely to be the forerunner of a distinct race of hardy varieties of this beautiful bulbous plant. It is a cross between C. capense and C. ornatum. It is thus described by *The Garden:* "The progeny is strikingly intermediate in character between the parents. The leaves are long, deeply channelled and glaucous. The flowers, borne in terminal clusters on stout stems, rising well above the foliage, are nearly as large as in typical or C. ornatum. The color varies from pure white to a delicate rose pink, and the varieties differing in color will no doubt receive distinctive names. The value of this new race of bulbous plants cannot be overrated as it is so totally distinct from any other hardy plant we have, and infinitely superior to the older varieties of C. capense."

A SHRUBBERY BORDER.

An illustration is here presented of a style of border that surrounds a mass of shrubs in one of the public gardens of Paris, the Parc Monceau. It will be understood at sight. The line of shrubs is indicated by the group marked 0, 0. 1 is a broad band or belt of Chrysanthemum grandiflorum; 2, Coleus Verschaffelti, (deep red;) 3, Coleus, Golden Gem, (clear red, striped with yellow;) 4, Coleus niger, (red, almost black;) 5, Santolina Chamæcy parissus, (silvery foliage;) 6, Pyrethrum parthenioides aureum, (golden leaves;) 7, Pelargonium zonale, Gros Jean, (bright scarlet;) 8, Lobelia erinus compacta, (deep blue;) 9, Grass.



SHRUBBERY BORDER OF FOLIAGE AND FLOWERING PLANTS

This is very formal, but very effective; such treatment should be attempted only in some very conspicuous place on grand grounds, and in the presence of structures of considerable architectural pretensions.

THE VIRGINIA CREEPER.

How much our Virginia Creeper is prized in Britain, where it is being more and more planted, may be learned from the following taken from the *Gardeners' Chronicle:* "We have no hardy Creeper that can compare with the 'American Ivy,' as it has been sometimes designated, for service at this season of the year. It is both a most accommodating and a most serviceable plant. It will do in almost any soil, and in almost any cold and wet situation. It can be planted in odd corners, and outside of these it will spread itself, clothing many a naked spot with ample verdure, and hanging in graceful festoons from any available point its leaders can reach. As a town plant for covering brickwork rapidly and completely we have nothing to compare with it. How many hundred residences in and around London are clothed with it from base to roof during summer. Falling in elegant and luxuriant folds, it relieves the harsh monotony of miles of otherwise naked brickwork. Strip the houses of its plenitude of handsome five-lobed leaves, and what a contrast would be presented to view. True, its leaves are not evergreen, like those of the Ivy, but they are not the less acceptable in summer, and in autumn they are aglow with living fire, in which, if it presages the decay of winter, yet lights up the dull declining days with a warmth of color that is as striking as it is in keeping with the season. What a delicious aspect of coolness it gives to a dwelling in summer, when no cloud tempers the heat of a bright July or August day. There are some who recommend that the smaller leaved A. tricuspidata should be planted in preference, to save the trouble of training, &c., but with all its good qualities it can never replace the more common A. hederacea. The former is highly valuable as a permanent covering, because its vine attaches itself to whatsoever it grows against, and forms a dense mass of wood, even when denuded of leaves; but it never festoons in so natural and graceful a manner as the common form. In the case of the Virginia Vine, the leading shoots that hang down in the way should be cut away when the leaves have dropped, and those left nailed or tied firmly into position. Thus the plants can remain till spring comes round, and the branches send forth their young growths. He who introduced the Virginia Creeper to this country was a benefactor to his race, and his memory should be held in grateful remembrance. But—who was it?"

BOG GARDENS.

There is no class of plants that has not its admirers, and in England we find more or less attention given to those plants that most of us have considered beneath our notice. The wild garden is already becoming a feature on some of the best grounds; Alpine or rock gardening is carried to great perfection, and bog gardens are becoming subjects of interest. "A bog garden," says the *Journal of Horticulture*, "may consist of a small irregular bed at the base of the alpine garden, or a more extensive one at a lower end in connection with a pond or miniature lake. In the latter case it should be irregular and have an undulating surface. If a natural stream of water can be turned so as to take a winding course, so much the better. I have, as I write, in my memory a piece of water for genuine aquatics and a bog in connection, through which a natural stream runs. It is an interesting corner, and a place to which I direct my steps almost daily to watch the progress of or attend in some way to the plants there growing. It matters little what the subsoil consists of in places where plenty of water is at hand. I have made bog gardens on a most retentive clay and also upon gravel, and have always found the desired condition as to moisture can be obtained with a little manipulation. In the case of a deficiency of water a clayey subsoil would be essential, and if a bog garden consists of a small irregular bed some artificial means ought to be adopted for flooding it in dry weather. I have seen this done by a small leaden pipe carried under ground. By elevating the surface in places you are enabled to grow a greater variety of plants."

DOUBLE ESCHSCHOLTZIA.

La Revue Horticole notices two varieties of Eschscholtzia Californica with double flowers which have appeared, one being white and the other orange colored. They commend themselves equally by their beauty and profusion of bloom. Unlike the single flowers, those of these varieties hold their petals comparatively a long time, even closing and opening several times. Seeds sown in early spring produce plants that commence to bloom in June, and continue until destroyed by the autumn frosts.

HEDGES OF CREEPING VINES.

"In Battersea Park the finest feature just now," (August,) says *The Garden*, "is a hedge composed of Clematis Jackmannii, Everlasting Pea, (Lathyrus latifolius,) Canary Creeper, (Tropæolum aduncum,) and Eccremocarpus scaber, all of which are flowering profusely, and their colors harmonize with each other in a beautiful manner. The Clematis preponderates, and forms a dense mass of the richest purple imaginable, while the others intertwine with it in a charming manner."

Very pretty low hedges can be formed by setting posts to stand about two or two and a half feet above ground, and stretching two or three wires along on them, on which to train Virginia Creeper, different varieties of Clematis, and other creepers. Virginia Creepers make a close wall of green, while the bright flowering creepers that run with them throw out their flowers conspicuously above the dark green back ground. Hedges of this description are quickly formed, and are very pleasing and effective.

EVER-FLOWERING THORN.

A French horticulturist has obtained from seed of the Hawthorn a variety that continues in bloom through the summer. It is described as a dwarf shrub and very bushy. Some specimen branches sent to the *Revue Horticole* are thus described. "Upon the branches which we have in our hands we see the results of three distinct seasons of bloom; that is to say, fruits arrived at their full development, others recently formed, and finally abundant corymbs of fragrant flowers." The variety is to be known as Cratægus oxyacantha semperflorens.

WEEPING PLUM.

A new variety of weeping tree makes its appearance in horticultural circles at Dresden; it is a Weeping Plum, originating among seedlings in a nursery. "The shape of this weeping tree," says the *Gardeners' Chronicle*, "is beautiful, and surpasses even the highly prized Prunus chamæcerasus pendula. With its bright green foliage it resembles a Weeping Laurel, and is very attractive during the flowering season."

DOUBLE FLOWERS.

Can seeds of double-flowered plants be depended upon to raise double flowers, or does it depend upon the size and vigor of the plant from which the seeds are taken.—A. F., JR., *Central City, Neb.*

To answer this question in full would require the explanation of several principles of vegetable physiology, which, though interesting, could only be satisfactorily given at considerable length, and therefore will not now be attempted. Perfectly double flowers cannot produce seed, since all the reproductive organs are converted into petals. Semi-double or partially double flowers may produce seed, and these flowers possibly may be self-fertilized or may be fertilized by others partially double or by single ones, and in either case may form seed, a considerable portion of which will produce flowers more or less double. Or single flowers fertilized by semi-double ones may produce seeds capable of similar results. Unusually large and vigorous plants are not, as our inquirer suggests, particularly favorable for the production of seeds, but, rather, particularly unfavorable; plants of medium vigor, neither stunted nor forced into rank growth are best. The raising of seeds that will produce double flowers is an art that requires much experience to enable one to practice it successfully, and nearly every kind of flower requires a peculiar and special treatment.

SCARLET HONEYSUCKLE.

What time should the Scarlet Trumpet Honeysuckle be planted, and what care should it receive?—E. P. D., *Sheridan, Mich.*

This is the proper time to transplant this climbing plant, as well as all others that are hardy. Trees, shrubs, vines and herbaceous perennials may be planted all through this month and next.

AURATUM LILY—HYDRANGEA.

Will the Auratum Lily succeed as a pot plant?

Is it best to plant Hydrangea paniculata grandiflora in the open ground this fall, or make a pot plant of it, and keep it in a good, dry cellar during winter, where it will have moderate light and air when the weather is not too severe to remove the window?—P. J., *Acton West, Ont.*

Auratum Lily does well under pot culture. Use a ten-inch pot; place in the bottom an inch or more of drainage, and then fill in about three inches of a compost of equal parts of leaf-mold, decayed sods and finely pulverized, old, leached cow manure, over this a layer of sand about an inch thick, and rest the bulb on it; then fill the compost all around and within half an inch of the top. Give a light watering, and set the pot away in the cellar to remain a number of weeks, possibly two or three months, or until a shoot appears, then it can be taken up where it can have more heat and the full light of the sun. While in the cellar do not allow the soil to become dry, but be careful to keep only gently moist. When taken to the light increase the quantity of water with the growth as demanded.

Plant the Hydrangea in the fall and draw the earth up around it for protection. It will be well to give it a light covering of leaves. After the first winter it will not need protection.

CHINESE WISTARIA.

Does the Wistaria die down to the ground in the fall or is it like the Virginia Creeper.—F. F., *Clinton, Ont.*

The Wistaria is a woody plant with a perennial stem, like the Virginia Creeper, that increases in size with age. It is hardy in the Northern States and the southern portion of Ontario, receiving injury by the cold at the ends of its shoots only in the most severe winters.

LILY OF THE VALLEY.

Please give explicit directions for cultivating Lily of the Valley out of doors.

The plant is quite hardy in all parts of the country, but likes a cool rather than a warm exposure, and if possible, it should have a slight shade; naturally it grows among shrubs and low trees, from which it receives some shade and shelter, and in planting it we should, if possible, give it a location imitating its natural site. In preparing a bed for it, if the material were at hand, we should mix some leaf-mold with the soil, but it usually succeeds on most soils without preparation.

LILY OF THE VALLEY IN A COPSE.

A PORCH CONSERVATORY.

Will you please answer me a question or two? I am a great lover of flowers. I am thinking of having a small conservatory. We have a porch on the south side of our house, our sitting-room opening on to it. Will you tell me if it will be warm enough from the fire of the room, in winter, in our California climate. I kept my flowers in the room last winter, but they did not bloom. I may not have had the right kind. Will you tell me what kinds will be best for winter flowering?—MRS. R. C., *Sacramento, Cal.*

The conservatory built and heated as proposed will very probably be warm enough, and will make a fine place for some kinds of plants.

It should be stocked with Hyacinths, Narcissus, Tulips, Crocus, Snowdrops and other bulbs as one may fancy. Chinese Primrose, Oxalis floribunda alba and rosea will give continuous bloom; then one will want a few plants of Bouvardia, Begonia, Heliotrope, some Mignonette, a few plants of the Calla, some of the fragrant-leaved and zonale Geraniums, a few Tea Roses. To these can be added a much greater variety, as desired.

SWEET PEAS AND SWEET CORN.

I wish to ask if Sweet Peas will grow here. Why did our Sweet Corn tassel, when only two feet high, and why could a neighbor who lives on a muck island, only raise nubbins? Will Sweet Corn grow here? An answer will do others good, perhaps.—N. H. H., *Orange Co., Fla.*

Sweet Peas planted in October or November, we should expect to bloom in the latter part of winter and early spring in middle Florida. We cannot say positively why the Sweet Corn tasseled out when only two feet high, but the probability is that it was because the soil was either very poor or very dry, or both. That the neighbor raised only nubbins on a muck island is not at all strange with our own experience of muck as a soil. It has but little fertility. If some of our Florida readers will answer the question, N. H. H. will, no doubt, be thoroughly satisfied that Sweet Corn will grow there, and in perfection, too, but it must have a suitable and properly prepared soil.

WILD DAISIES.

Summer's thought of snow-flakes,
  Perchance, sweet bloom, are ye,
With a glow of June time
  Breathing tremblingly
Among your fringing petals;
  And there's a crown of gold
To make complete your beauty,
  Wild Daisies that I hold.

Simple, modest blossoms,
  Smiling to the morn,
Tossing in the sunshine,
  Bowing to the storm;
Dainty thoughts of Summer,
  Jewels from her hand!
O, who could spare the Daisies
  From our pleasant land!

—MRS. CHARLOTTE E. FISHER.

TUBEROSES NOT BLOOMING.

As you kindly answer all questions, I will ask why my Tuberose does not bloom I planted it a year ago last spring. It has borne about ten bulbs, but has never bloomed.—M. M., *Sugar Creek, Ind.*

As the bulb did not bloom the first season of planting it is probable that it was unsound, or, in other words, the flower spike it contained had been destroyed. Tuberose bulbs are easily injured by cold; a low temperature, especially with moisture being very detrimental to them; in this condition, however, they are capable of producing young bulbs, as in the present instance. The young bulbs may need another season's growth to be strong enough to bloom. They should now be taken up, dried off, and left in a warm, dry room until they are planted in spring. If they should not bloom next season it will again be necessary to keep them warm and dry another winter, and then plant another spring.

A BEAUTIFUL PLANT.

A favorite greenhouse, spring-blooming plant with us is the Jasmine-like Trachelospermum, T. Jasminoides, commonly known in the trade as Rhyncho-

TRACHELOSPERMUM JASMINOIDES.

spermum Jasminoides. It is a fair grower, with rather thick coriaceous, bright, shining leaves, and produces its exquisitely fragrant white flowers in great abundance, and for a long time. It can be trained into almost any form one may fancy, and in the greenhouse is a good pillar plant. It bears ordinary house treatment much better than most plants, and one having a knowledge of it would not willingly do without it. Our engraving represents it on a reduced scale.

AN AURATUM LILY.

In accordance with your request, I send you some facts concerning my Auratum Lily. It was first planted on the west side of the house, on level ground, in sandy soil, receiving in that place the afternoon and evening sun only. In this place it remained for eight years, blooming as follows: first year, three flowers; second, four; third, five; fourth, nine; fifth, seven; sixth, seven; seventh, seven; eighth, five. At the end of the eighth year, in the fall, I transplanted the Lily from the east to the west side of the street, where it has been receiving only the morning sun, being within seven feet of the house. The soil was taken from an excavation for a cellar—poor, sandy ground, as in the former place. After it had come above ground, in the spring of the ninth year, I put liquid manure around the root, repeating this quite frequently. This is about the only treatment it received, not having been covered in winter. In the ninth year it had but one stem, which was all it ever had; the tenth year it had five stems; this, the eleventh year, it had five stems. In the ninth year, the plant bore, on one stem, twenty-three flowers; the tenth year, on five stems, forty-three; and this year, on six stems, fifty flowers. The plant at this date is, apparently, very healthy. The bulb will measure about six by eight inches; and I expect the yield of flowers next summer will surpass that of former years.—L. H., *Johnstown, Pa.*

SEEDLING GLADIOLI.

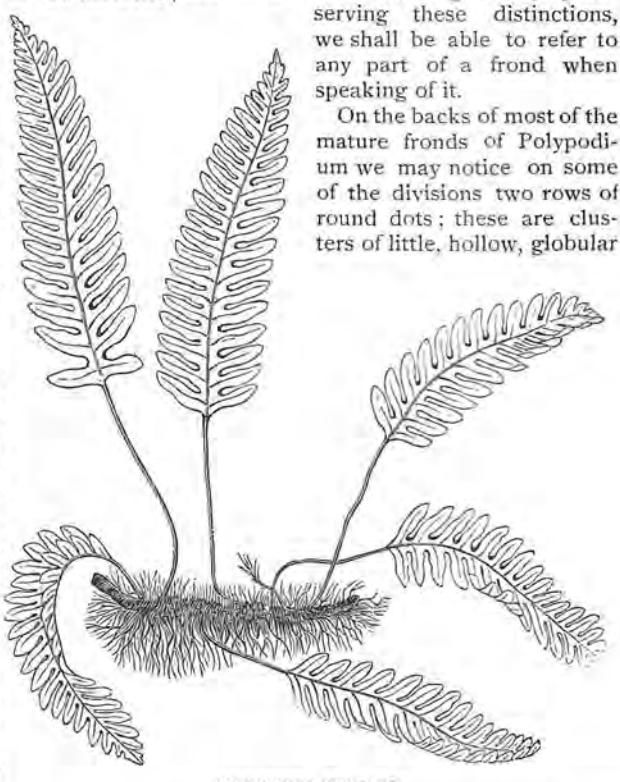
Our Seedling Gladioli have been remarkably beautiful this season; it is even quite surprising to see how many, proportionately, of these plants produce flowers that are fine in form, color and size, or rather, how very few do not. This result is attained by selecting seed from the best named varieties. As the plants bloom, all poor ones are destroyed.

NATIVE FERNS.

Some articles were published in our second volume about the Ferns of this country. Since that time numerous requests have been made that the subject should be treated more in detail, and to satisfy, in a measure, these expressed desires, we now offer the following matter, with illustrations prepared specially for it. If what we now present should prove acceptable to our readers, it is designed to continue the subject until, at least, the greater number of native species of Ferns shall have been noticed, and those most distinctive and abundant in the different parts of the country illustrated. There is so much of interest connected with the growth and reproduction of these plants, they are so beautiful, and may be made so serviceable for decorative purposes as living subjects or as dried specimens, they are worthy of the attention equally of plant-growers and of the students of nature. Our attempt will be to describe the different species so that with ordinary attention to them they may be identified, and to suggest their proper treatment in cultivation. Our own observations of these plants and the knowledge we have gained from their cultivation will be supplemented by information derived from the publications of the best authorities on the subject. Without noticing more of the peculiar organization of Ferns in general than is necessary for our present purpose, we may examine a few principal features, and in doing so make use of language nearly as previously employed.

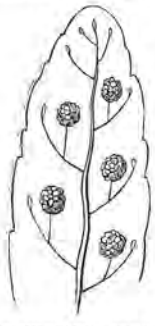
Looking at the sketch of the common Polypody, Polypodium vulgare, we perceive several stems arising from a common root-stock. The stem is called the stipe and the leafy part the frond. These are names always employed in speaking of Ferns. We shall find other terms peculiar to these plants and quite different from any of those applied to flowering plants. The frond of the Polypodium is oblong in form and deeply pinnatifid, or cut pinnately, that is, the divisions are compared to the feathers on a quill, which, in Latin, is called a *pinna*. Each of the divisions of the frond is called a *pinna*, in the plural the word is *pinnæ;* if these divisions were again divided into smaller parts, as in some kind of Ferns they are, these small divisions would be called pinnules, and still smaller divisions are called lobes and segments; by observing these distinctions, we shall be able to refer to any part of a frond when speaking of it.

On the backs of most of the mature fronds of Polypodium we may notice on some of the divisions two rows of round dots; these are clusters of little, hollow, globular bodies, each of which has a stem by which it is attached to the surface of the frond. The dots are not shown in the first sketch on account of its reduced size, but may be seen in the illustrations of the two other species now presented, and still more clearly in the accompanying engraving of an enlarged portion of one of the divisions with the cluster represented magnified. One of these little globular bodies, when whole and when burst open,



POLYPODIUM VULGARE.

with its stem or foot-stalk, is shown greatly magnified by two illustrations. This globular body is a thin membrane strengthened by a firmer net work all over its surface. The stem, or foot-stalk, from the point where it supports the little, hollow globe, appears to be continued by a series of jointed lengths, which, extending nearly around the globe, almost make a ring. This singularly formed body is called a spore-cases, or *sporangium*; it is filled with an immense number of minute particles called spores, and which correspond to the seeds of flowering plants. They are not considered seeds, for the reason that plants do not develop from them precisely in the manner they do from the seeds of flowering plants, so instead of calling them seeds they are called spores. The spores form in the spore-case as seeds form in a seed vessel and mature. When the spore-case ripens, the ring which extends nearly around it begins to shrink, and finally it contracts so much that it tears open one side of the case and the spores fall out to the ground, or sometimes float away in the air, and are at last deposited upon a spot congenial, perhaps, to their germination at a long distance from that where they grew. By the aid of a magnifying glass, much that has now been described about this Fern can be distinctly seen, but if you wish to examine the spore-cases and the spores very particularly, it will be necessary to use a microscope. One who is studying Ferns, or who examines minutely any plant should carry a good compound lens as a pocket companion.



POLYPODIUM. FRUIT DOTS ENLARGED.

SPORE-CASE ENLARGED.

The spore-cases on the Polypody grouped together into circular patches are called, in common language, fruit-dots; on some kinds of Ferns, instead of being circular in outline, they are oblong, as we shall see hereafter. The proper botanical name of a fruit-dot is *sorus*, and, when two or more of these dots or patches are spoken of, the word *sori* is used. Now, if you will observe the fruit-dots, or sori, carefully with the lens, you will see that the little spore-cases, or sporangia, stand huddled close together like good companions, as they are, and brave, too, for they seek no shelter, but face the wind that sometimes drives against them, and the insects that creep over them. Standing as they do in this unprotected manner, they are said to be naked. When we examine other kinds of Ferns, we shall find that some of them have their spore cases covered, and the peculiarities of these coverings, or *indusia*, serve in a measure to distinguish them.

The common Polypody is, on some accounts, one of the most interesting of Ferns. It loves the rocks, usually growing on them, with only the thinnest stratum of soil that has been formed by decaying mosses; when growing on fertile ground, we believe it is only on hillsides where the drainage is perfect. A slight shade, at least from the greatest heat, is its preference, though we have seen it on rocks fully exposed to the sun during the whole day. A plant that can thus make its abode where no other vegetation will thrive, and not merely exist in a poverty-stricken way, but actually luxuriate and cover great surfaces of rock as with a green carpet, is admirable beyond expression. The general appearance of this Fern is very accurately shown in our illustration. The smallest fertile frond now in our possession, including the stipe, is an inch and five-eighths in length from the root-stalk to the tip, and the largest, similarly measured, is nearly

POPYPODIUM INCANUM GROWN WITH AN ORCHID ON A SECTION OF A TREE STUMP.

sixteen inches long; without the stipes the measurements are an inch and an eighth, and eleven and three-quarter inches. Such is their variation under different circumstances. EATON, in Ferns of North America, mentions some Colorado plants with fronds only half an inch in length, and some from Madeira fourteen inches long.

FROND OF POLYPODIUM INCANUM.

The name, Polypodium, is derived from the Greek words, *polys*, many, and *pous*, a foot, and its application is evidently in relation to the many stems or foot-stalks, arising not from a common center, but standing about without any orderly relation to each other, as they are developed at irregular distances upon the common root-stock, or rhizome. G. W. JOHNSON, a writer upon "The British Ferns," says the word has reference, "according to Theophrastus, to the resemblance borne by its numerous rootlets to the feelers of the Polypus." The root-stock is closely clothed with delicate, brownish chaff, or scales; it branches irregularly, and sends out numerous fine, hair-like rootlets. The positions on the root-stock of fronds that have decayed and fallen off are marked by slight, roundish protuberances. When a frond has withered and died the stipe at its base makes a complete separation from the root-stock, not merely breaking off; thus the stipe is said to be articulated with the root-stock, disjointing when it perishes. This is a feature peculiar to the genus, Polypodium, and one that distinguishes it from all others of the Fern order.

In its general outline an average specimen frond of the common Polypody is oblong, having very nearly, or quite, its full width at the base, and holding it with little perceptible variation about two-thirds of its length upwards, and then tapering gradually, sometimes abruptly, to a long, or sometimes short, terminal point. The frond is deeply pinnatifid, or in other words it is divided on each side with many parts or pinnæ, each division reaching nearly to the midrib, or rachis. The rachis, meaning a backbone, is the extension of the stipe through the frond, being the same as the midrib, which is the extension of the petiole in a leaf.

The pinnæ are oblong, mostly blunt or rounded at the extremities, usually somewhat sword-shaped, curving upwards, the margins are obscurely notched, or sometimes slightly toothed. By holding a frond toward the light, it may be perceived that the veins are free, that is, they terminate abruptly and do not unite with each other; usually they are two or three times branched, and end with an oval or roundish enlargement; the sorus is always borne on the upper branch of the vein, almost midway between the margin and midvein of the pinnule, usually a little nearer the margin.

The texture of the frond is firm, the color a dark green, lighter on the under side. The stipe is smooth, green, a little lighter toward the base; on each side is a long narrow wing which broadens out into the blade of the first pinna. A fair specimen lying before us as we write measures eleven inches from root-stock to tip, the stipe being four and a half, and the frond six and a half inches; these relative proportions are maintained with much constancy in specimens of average size, but vary considerable in very long or very short ones. On this specimen

there are thirteen pairs of pinnæ; the seven uppermost pairs and the terminal segment are fertile. Often only two or three pairs of pinnæ are fertile, but usually more.

The largest and the smallest specimens previously mentioned have respectively twenty-four and six pairs of pinnæ; of the latter all but the lowest pair are fertile, and every pair of the large one, which is quite an unusual case. This fine specimen was obtained near Broad River, North Carolina. The sori of a frond just arrived at maturity are of a bright golden yellow color, but with age this turns to a dark brown. In this country this Fern has a wide range, and, in the localities best suited to it, is very abundant. According to EATON, it "extends from the Atlantic to the Pacific, and from the Slave River and Winnipeg Valley to the mountains of Colorado, Arkansas and North Carolina, and probably to those of Alabama also." In a few places some peculiar forms of it have been found.

POLYPODIUM CALIFORNICUM.

The cultivation of this Fern is very simple. In the open or hardy fernery it will require a situation a little shaded among or on the rocks, with only a small amount of soil, and where the drainage is perfect. The natural rainfall will be sufficient for it ordinarily, for it will freshen up and revive after a rain, even if it has been subjected to a long drought, so great as to cause it to roll up, droop and lie flat on the ground. It can be well grown in the cracks of an old decaying tree stump, on the shady side, and especially if protected a little by the foliage of some vine creeping over the stump. It is easily grown in a Fern-case; as a pot plant it should have the pot at least a third filled with drainage material, and the soil need be little more than leaf-mold with a small amount of garden soil added to it; a very moderate supply of water will be sufficient.

In the Southern States a very interesting species of Polypody is found; this is P. incanum, the Gray, or Hoary, or Scaly Polypody. It is a small Fern, and the illustration presented of a single frond is full size of one of the largest It is dark green on the upper side and beneath covered with little scales that give it a hoary or grayish appearance. It grows very common on trees, and sometimes on rocks and on the ground, and frequently takes possession of old roofs which it covers closely as thatch. This Fern can withstand a long drought and yet revive with moisture. When very dry it curls up, appearing withered and lifeless, but in a few hours after receiving water will unfold and appear quite fresh and green. The specimen shown in the illustration growing with an Orchid on a section of a tree trunk, was kindly sent us, early in the summer, by a lady reader of this MAGAZINE, from Orange County, Florida. The piece of bark was stripped from an old tree and placed in a box and sent by express. On account of some delay it was nearly two weeks on the way in the very warmest weather, and when received the little plants appeared quite withered. It was kept in a damp place a few days and then fixed upon a piece of log where the plants have continued to thrive, and many new fronds have appeared. MARY C. REYNOLDS, an indefagitable botanist and an especial admirer of Ferns, and who has made a considerable investigation of Florida plants, says that this one is called the "Resurrection Fern," because it freshens up so quickly when moistened after being very dry. "I used," she says, in a communication to the valuable *Botanical Gazette*, "to be

very much interested in watching an old roof, which was partially covered with it. In dry weather it was as neutral-tinted as any other old shingle roof, but after a shower, it showed a bright fresh green Fern garden."

This little Fern grows from Florida to Texas and north as far as Virginia and

FROND OF POLYPODIUM CALIFORNICUM. THREE-QUARTERS NATURAL SIZE.

the Southern parts of Ohio, Indiana and Illinois. Its cultivation will be most successful in the manner already described, or, if in a case, by placing it up on some elevated object, either wood or stone, to protect it from excess of moisture.

The California Polypody, P. Californicum, is a handsome little Fern. The illustrations here given of this plant and of a single frond show that its form is quite different from P. vulgare. It has an ovate, or ovate-oblong form, according to its size, which is from a few inches to about a foot in length. The texture of the frond is thinner than that of the common Polypody, and is described as papery herbaceous. The segments or pinnæ, which are usually acute, are mostly regularly and distinctly serrate. The veining in this Fern marks it as quite distinct from P. vulgare, for instead of two to three, as in the latter, it has usually from four to six veinlets, and often these unite, while in the latter we noticed the veins were always free. This species presents some variations which cannot at present be noticed. It is usually found growing on rocks and in rocky ground, and according to EATON is "confined to the region west of the coast range of mountains, and to the islands lying off the shore." We have found this plant very tractable under pot culture in the greenhouse, requiring good drainage, a light soil, and moderate watering. We now have it in the open ground, a little shaded, but have not yet wintered it out.

The species of Polypodium that have now been described are those that are distributed over the largest areas in this country; but besides these, Florida supplies five and California one other species. The grandest of these is P. aureum, the Golden Polypody, which sometimes has fronds standing four feet high, of which length the frond measures thirty inches. A common size is about two feet in height, and mature fronds are often not more than six inches long. In Florida this species grows especially on the Palmetto trees, upon which it is epiphytic. It is much cultivated in greenhouses, and is very ornamental. The lightest soil in a well drained pot and light watering is the proper treatment. MARY C. REYNOLDS says, "this is a very beautiful, majestic Fern, and though associated always with the Cabbage Palmetto when wild, it bears very well to be planted in the fernery or flower pot. It seems to be a very slow grower; some root-stocks planted in this way were three or four months in putting out their first leaves, but after grew much faster."

There are four other Florida and one more California species.

THE VIOLET.

In fall I saw the rustling, dead leaves lying
Above a spot where Violets had grown,
And, searching there I found the blossoms dying
Beside a mossy stone.

"Dear little flower," I said, in pity bending,
"Your yellow leaves are eloquent of doom;
For us, and you, there is one common ending—
Earth for us all makes room.

"From earth we came. To earth we are returning.
To-day we live, to-morrow are unknown."
And then I heaped the leaves, with frost-fire burning,
About the lichened stone.

To-day, my heart was filled with spring-time gladness;
I walked old paths, and there, beside the stone,
Where I had heaped the leaves with thoughts of sadness,
Behold! new flowers had grown.

And, as I stooped to give the flower greeting
With loving touch, as meeting friends clasp hands,
"There is no death," it seemed to me repeating.
Heart, canst thou understand?

—EBEN E. REXFORD.

GLADIOLI—LILIUM AURATUM.

I do not think you give your unnamed Gladioli the honest praise they justly deserve. Last year I purchased an unnamed "bakers' dozen," assorted colors All have bloomed but one, and they have been a source of the greatest pleasure. There are no two alike, all being entirely different and beautiful, varying from almost white to the deepest red; in fact, they equal in beauty some of the costly named varieties. I never expected anything so fine. Although there are many beautiful named varieties within reach of flower lovers of moderate means, yet I would say to those who cannot afford the costlier varieties,to get an unnamed dozen of Gladioli, and you will never regret it.

I suppose it is generally understood that Lilium Auratum is perfectly hardy in most sections of the country, but thinking that some might like to know how the Province of Quebec suits it, I will tell you my success. I purchased a bulb from you six years ago, and planted it deep in soil well-prepared, according to directions. The first year it remained dormant, the next year it produced one enormous flower, and as it gained in strength from year to year, it produced more flowers, and a year ago, instead of one stalk, it had two, and this year it has sent up five blooming stalks, four of which were not less than five feet in height, producing more than fifty magnificent blooms, the surprise and admiration of all who beheld it.—L. H., *Cowansville, Quebec.*

THE WHITE PARTRIDGE BERRY.

I am delighted to find by the notice of your correspondent, C. A., Moravia, N. Y., that he has met with that rare, interesting, little creeping plant, the White Partridge Berry, for such it evidently is, the Mitchella alba. In one of my rambles, scrambles rather, in the Pine woods in our Canadian wilderness, I came upon a wide plot of this charming evergreen plant, then covered with its white, waxen, double-eyed berries, which shone conspicuously among its darkly shaded foliage The fruit and leaves were larger than those of the sister plant, Mitchella repens, the creeping Partridge Berry of the Indian squaws, with its brilliant red fruit, and sweet, starry blossoms.

On turning to Dr. Asa Gray's manual of the Botany of the Northern United States, I found no corresponding description of this, to me, new species. The only plant with the name Creeping Snowberry, is Chiogenes hispidula; but this is not our White Partridge berry. I am well acquainted with Gray's plant, Creeping Snow-berry, and very pretty it is, forming mats of tiny evergreen leaves, and greenish white flowers, succeeded by small, round, white berries. It is found in black, peaty soil, in cedar swamps and boggy, shady ground, running over decayed wood and wet mosses. I do not think that the fruit of this pretty, graceful little creeper is poisonous, but it is flavorless and insipid. It would make a pretty plant for hanging baskets or pots, if one could coax it into growing freely. Who will try it.—C. P. T., *Lakefield, Ont.*

PANSIES. — I transplant Pansy plants early in October in a small bed, and cover them with a frame and two old window sash; here I can otherwise protect them and get a supply of flowers nearly all winter. The sash are always opened on mild days to give air.—M., *Waterloo, N. Y.*

DOUBLE LYCHNIS.—A plant that appears to be little known is the Double Lychnis Chalcedonica. It is exceedingly beautiful and of easy cultivation.—MRS. C. W. H., *Wellington, O.*

FLOWERS AT THE SOUTH.

Our Southern friends have very freely responded to an inquiry made some months since in our pages for definite information in regard to the flowering plants that prove serviceable with them in their gardens in summer under their hot sun, and also what ones bloom during winter. From the numerous letters received we shall give condensed statements embodying what is really important, and which we have no doubt will be valuable information to the more inexperienced of our readers at the South. At this time we present the facts relating to this subject in regard only to Florida, reserving the remainder for another time. One of these reports says: "Nearly every thing in your catalogue will grow here; nothing requires protection, as frost is rarely seen more than one night. Mean temperature for January is 67°, for July 88°; highest summer temperature 93°, lowest winter temperature 26°." This report is from Leon County. The Counties in Florida from which reports have been received are Orland, Orange, Santa Rosa, Leon and Hills.

With suitable shade and plenty of water an immense variety of vegetation would thrive, and no doubt is cultivated with care in Florida, but it is not to be supposed that shade and water can always, or generally, be provided, it is, therefore, interesting to know what plants cultivated for ornament adapt themselves to the climate with ordinary cultivation. It is probable that most of these are given in the following lists under the names of of the seasons they appear in greatest beauty.

ALL SEASONS.

Antirrhinum, or Snapdragon, nearly all the year; Boussingaultia basselloides, or Madeira Vine; Centaurea Cyanus, or Bachelor's Button; Datura, in flower every month; Geranium, scarlet; Lantana; Nerium Oleander; Petunia, likes moderate shade in sumer; Phlox Drummondii; Poinciana, a magnificent bush; Portulaca; Roses, all kinds; Salvia, or Flowering Sage; Tagetes, or African Marigold; Verbena, burns badly in summer; Vinca, or Periwinkle; Zinnia.

SPRING.

Gelsemium sempervivum, or Yellow Jessamine; Jasminum, or Cape Jasmine, and others; Lonicera, or Honeysuckle, in variety; Pansy; Passiflora, or Passion Flower; Philadelphus coronarius, or Syringa; Spiræa prunifolia, or Bridal Wreath; Yucca.

SUMMER.

Althæa, June to October, one report all the year, grows freely; Bignonia radicans; Caladium; Canna, May to October; Gardenia Florida, or Crape Myrtle, July and August; Gladiolus; Honeysuckles, all summer; Jasmines, all kinds; Lilies; Mirabilis, Four O'Clock, from June to October, nothing hurts it; Nerium Oleander, one report July and August; Poinciana; Poppy, White, or Opium, likes moderate shade; Tuberose.

FALL.

Pansy.

WINTER.

Chrysanthemum, November to Junè; Geranium, scarlet, January to June; Pansy; Pinks, November to June.

It may be well to direct attention to the fact that the only Annuals mentioned are Centaurea Cyanus, Petunia, Phlox Drummondii, Portulaca, Tagetes and Zinnia. Of course, others are cultivated, but they need to be potted, those mentioned brave the sun, and, with the exception of the Petunia in summer, rejoice in it. Now the Zinnia and the Tagetes are natives of Mexico, Phlox Drummondii of this country, Portulaca and Petunia of warm parts of South America, and the Centaurea is found wild in most parts of Europe, thriving in the warm countries about the Mediterranean as well as in those further north.

The other herbaceous plants mentioned for all seasons are the Antirrhinum, the Datura, Salvia and Verbena, all inhabitants of countries of great summer heat.

The winter season in Florida is one of great beauty, for then, with the exception of the few flowers named in the summer and spring lists, all others are in bloom, and as at that season there are plentiful rains vegetation is in its finest condition. Roses then find the weather perfect and give their bloom in greatest profusion.

Those commencing flower culture in Florida will find these lists of particular value. In our next issue the substance will be given of reports received from the other Gulf States and South Carolina and Georgia.

A RAINY MORNING TALK.

As Mr. Benson and sons left the breakfast table one rainy October morning, he said,

"Boys, come with me out here on the side porch, and let's have a talk."

Now, Mr. Benson never proposed any thing to his sons that promised more pleasure than "a talk." So they followed him with alacrity, and were soon seated.

"When I was quite a small boy," he commenced, "I was gravely impressed by hearing a man say that he was sixty years old. I seriously thought that another sixty years could not pass without the end of the world coming, and I was in trouble lest I might live to such a fearful age. But next month, boys, I, too, shall be sixty, and the thought makes me feel like an old man."

"You don't look like an old man, father," said Reuben, the eldest son.

"Nor seem like one," said Hiram. "You are just as good for a rough-and-tumble with us boys now as you were when we were little shavers."

"Father, you'll never be old to us, and don't let's talk about it," said Edwin.

"Well, we'll talk more indirectly about it then. When your uncle Nathan, who is seventy years old, was here, last month, he told me that the old Hickory tree yonder, back where the homestead used to stand, was set out by my father on my first birthday, and that it was one of a number that he had raised from extra good seed, and was planted as a legacy to his descendants. He died while I was still too young to appreciate its connection with my birthday, and the circumstance was partially forgotten. But the past comes vividly back to old memories, and your uncle's return to the few remaining landmarks brought many reminisences of the olden time to his mind."

"So, that's the way, is it?" exclaimed Reuben, "that we are in possession of the finest nut tree in the county! Such thin, brittle shells, such kernels, always plump and sweet."

"Father," said Hiram, "I've been puzzled several times of late at seeing you hovering around that tree, knowing that no nuts had fallen yet; couldn't believe you were contemplating a few timbers out of it for the new barn."

"No, no, indeed! I was going back mentally to the days of my father, and tried to imagine his very thoughts while he was planting that tree, and driving the stakes, which, I remember, were so strongly wired at the top. He must have done his work according to the old motto, that 'whatever is worth doing at all, is worth doing well.' Boys, can either of you give an estimate of what that tree has been worth to you almost every year since you can remember?"

"I'll guage its worth to me," said Reuben, "by all the pleasure I've had in nut gathering with jolly boys and girls whom we had invited to join us in nutting, and by the added charm the nuts gave to many an evening's frolic. Apples were never so good as when eaten after the nuts. I am twenty years old now, and I'd think the memory of my boyhood spoiled if I had to look back on it with the old Hickory left out."

"And I," said Hiram, "always supposed the tree came there by chance, and by chance escaped the ax, and gave its origin no particular thought. But I was always proud of the fine nuts, and willing enough to share them with other boys, if only to show them how superior they were to those they found elsewhere. And I well remember that the happiest nights I ever had were when I could hear, between naps, the winds on a rampage after

the first hard freeze, and knew the ground would be covered with nuts the next morning. And, O, what fun I had in slipping out of bed on the sly, so as not to waken Reub, and thus secure to myself the first fall of the season."

"Yes, I remember," responded Reuben.

"Then," said Edwin, "I am going to tell in my own way how much value I think that tree has been to me. I know I've had ten dollars' worth of pure fun under it every year since I was six years old, and that is nine years, and ten more dollars' worth cracking and eating the nuts in the house during long winter

evenings after we were tired of lessons or games and puzzles. And each of the last two years, when you boys were away at school, I sold ten dollars' worth in the city."

"Which makes," said Reuben, "just two hundred dollars value that you have realized from that tree."

"That is not a bad showing," said Mr. Benson, "and I trust that we all understand now how much good and pleasure may be dispensed by one such deed as my father's. And, boys, as old as I am, it is only since your uncle's visit that a train of thought and feeling has been developed in regard to our native trees, and especially our nut trees. There is a prevailing sentiment in regard to fruit trees that keeps us supplied, in a measure, with fruits, but the native nuts are neglected. And now, boys, since it was a tree planting that commemorated my first birthday, I propose that the ceremony be repeated on my sixtieth."

The boys smiled as he continued, "I would like each of you to plant one of our handsome, long-lived trees on that day, and, as our Hickory cannot always live, I shall make it my business to perpetuate its kind for the benefit of my descendants. I shall also try some Chestnuts. Although not indigenous here, we'll see what can be done by pains-taking."

"Father, is not spring the best time to set out trees?" inquired Hiram.

"It is usually so considered," he replied, "partly because in early spring there is plenty of leisure for such work. But you will find that when the leaves have fallen and the sap is well settled in the roots, that if carefully taken up and properly set out they will be ready for the spring growth. But there will be no free, thrifty growth at either season if the tapering roots be all cut off, and the stubs that are left be jammed into a hole barely large enough to receive them. Such

treatment is an insult to nature. 'If any thing is worth doing, it is worth doing well.'"

"Do you think, Father," inquired Edwin, "that we have such remarkable trees in this country as there are in the tropical regions?"

"Trees are remarkably adapted to the climate and to the needs of the people where they are found. The Date Palm, the Bread Fruit, and Cocoanut trees are useful for shade and sustenance, and the forest-like Banyan for shade."

"Humph!" grunted Hiram, "I think we've got a forest-making tree here, only that the thick growths are from the ground up instead of from the limbs down."

"What tree is that?" inquired Reuben.

"Is it possible that you've forgotten the back breaking work that we did for two summers in trying to root out, or out root, that Silver Poplar that stood by the barn? It crossed the creek and came up all over the back yard, it spoiled two wells and a cistern, and grew into such sturdy bushes under the barn that the floor was about to be lifted. If you chopped one off, ten others sprouted from the stub you had left. To speak briefly, the roots raced under ground, like serpents, and popped up their heads every where. When I read about the Government planting a National Park in the far West, I wished I had the contract. I'd have taken some sprouts in a satchel and stuck one in the ground every mile or so, and the job would have been completed."

"This light, rich soil favors the growth of the Silver Poplar," said Mr. Benson; "in some localities it would be less troublesome. But, Edwin, we have trees in this country that are remarkable from historical and other associations, as well as for their substantial qualities and beautiful proportions. I will only speak of one now, that was described to me by a civil engineer of Newport, Ky. He had traveled as surveyor in company with the State Geologist and his assistants, and traversed some of the most uncivilized districts in the United States. They saw, on one occasion, the trunk and limbs of an immense hollow tree, inside of which a white man and his wife had raised eight or ten children to an age when they could scatter off and look out for themselves. For a chimney they had sawed off a large hollow limb, and lined it with clay. Was not that primitive housekeeping?"

"O, it was glorious!" said Edwin. "No garden to make, no walks to rake, no house cleaning and white washing to do."

"Not so fast," said his father, "I'll warrant they had a big potato and cabbage patch close by. Of course, they had no taxes to pay, and probably had no visits from insurance agents. But to change the subject, how does it strike you about the tree planting I proposed for next month?"

There was a quick response of approbation from all, when Edwin added that he'd been choosing his tree and listening too, until his head was a jumble of Elms and Oaks, and Lindens, and Maples, and civil engineers, and babies in hollow trees, and he'd have to go and shake himself to get straightened out.—AUNT MARJORIE.

AN EVENING PRIMROSE.

"Dear friends who read the world aright,
And in its common forms discern,
A beauty and a harmony
The many never learn,"

Listen while I tell you about a single flower which grew on the roadside, beautiful for its fragrance and its modesty, its unassuming loveliness; for, while all other flowers loved to show their beauty in the day-time, this one delighted in evening shades. An Evening Primrose that sprang up by the fence on a half-neglected street, became an object of much pleasure to a whole neighborhood, and each evening found many groups seated at reverent distance to watch the petals unfold as the sun retired in splendor and glory to his couch of purple and gold. The buds, one evening, thirteen in number, seemed to understand and feel that the great monarch of day had retired, for they all began to tremble, and the long sepals which enclosed them flew back with a spasmodic action so characteristic of this flower, as if in a hurry to enjoy the evening shades; and then the golden petals slowly moved and opened their beauty to our gaze, as if they had felt the sun to be an enemy, and were rejoicing in his absence. No sooner were the flowers fairly opened than the hawk moth appeared, a curious creature, with a long proboscis, just adapted for this flower. He pierced each one and greedily drank. We wanted to catch him, for

he looked so like a humming bird on the wing. With breathless interest he was watched, the children even being silent before him. His boldness was unsurpassed, as in the eagerness to draw the nectar from each opening flower, our presence was unnoticed by him. Fortunately, our curiosity to watch his actions overcame the desire of possession. And so, as evening after evening found us awaiting the opening, never did the curious hawk-moth fail to make his appearance, undaunted by our presence or

ŒNOTHERA BIENNIS.

numbers. It was interesting to note how the humble flower attracted to its side the children; even in the day time they would collect around it in groups and discuss it, counting the buds which would unclose that evening; only one boy ruthlessly plucked a cluster of buds and then threw them on the ground, which act of desecration made him an object of scorn, and he was spoken of as a bad boy.

Dear Evening Primrose, how have you unconsciously lifted us above our petty trials and daily sorrows, preaching little evening sermons and impressing the children for good! We are sorry you will not bloom for us another season, for we learn that your habit is only to bloom the second year of life and then to die; but we bless and thank you for the many happy nights this summer, and for the rich lessons of beauty, and for the elevation of thought imparted to a whole neighborhood, each family of which wished that you had found lodgment in their own garden. We shall all take pleasure in gathering the seed and cultivating it, but never again will it preach such sermons, or inculcate such lessons as it did this year on the roadside.—M. H. S.

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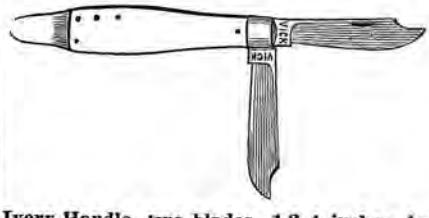

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E. R. VAN SCHIVER, Commission Merchant, said: "I have sold it at 25 cents per pint. I shipped it four hundred miles by express and made money on it."

Full information concerning this remarkable Raspberry, such as its history, record on the market, full description, notices of the press, prices of plants, etc., will be mailed to all applicants.

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